# Education

## Doctor of Philosophy 2015-2019

College of Information and Computer Sciences, University of Massachusetts Amherst

Advisor: Philip S. Thomas

## Master of Science 2013-2015

College of Information and Computer Sciences, University of Massachusetts Amherst

Advisor: Sridhar Mahadevan

## Bachelor of Science 2008-2011

Misher College of Arts and Sciences, University of the Sciences in Philadelphia

# Experience

## Roku 2022-Present

Senior Machine Learning Scientist

Research in machine learning for recommendations and ranking. Build and deploy models to be used in production.

## Amazon Alexa 2019-2022

Applied Scientist – L5

Conduct research and implement solutions for the core natural language understanding system in Alexa.

## University of Massachusetts Amherst 2015-2019

Doctoral Student

Conducted research in reinforcement learning with a focus on temporal abstraction and meta-learning.

## Microsoft Research 2016

Research Intern

Conducted research in navigation of unmanned air vehicles (UAVs).

## Adobe Research 2014

Research Intern

Conducted research in natural language techniques to support business analytics teams.

# Publications

## [NAACL 2021] F. G. Garcia, L. Chen, V. Kumar, H. Xie, J. Lu.Industry Scale Semi-Supervised learning for Natural Language Understanding. In Proceedings of *the 2021 Annual Conference of the North American Chapter of the Association for Computational Linguistics*.

## [Ph.D. Dissertation 2020] F. G. Garcia. Improving Reinforcement Learning Techniques by Leveraging Prior Experience.

## [NIPS 2019] F. M. Garcia, P. S. Thomas. A Meta-MDP Approach to Exploration for Lifelong Reinforcement Learning. In Proceedings of *the Thirty Third Conference on Neural Information Processing Systems,* December 2019.

## [RLDM 2019] F. M. Garcia, C. Nota, P. S. Thomas. Learning Temporal Abstractions from Demonstration: A Probabilistic Approach to Offline Option Discovery. In *The Fourth Multidisciplinary Conference on Reinforcement Learning and Decision Making,* July 2019.

## [AAMAS 2019] F. M. Garcia, B. C. da Silva, P. S. Thomas. A Compression-Inspired Framework for Macro Discovery. In Proceedings of *the Eighteenth International Conference on Autonomous Agents and Multiagent Systems,* May 2019. Extended Abstract

## [CAVW 2014] K. Ninomiya, M. Kapadia, A. Shoulson, F. M. Garcia, N. I. Badler. Planning Approaches to Constraint-Aware Navigation in Dynamic Environments. In *Computer Animation and Virtual Worlds,* 2014.

## [ICRA 2014] F. M. Garcia, M. Kapadia, N. I. Badler. GPU-Based Dynamic Search on Adaptive Resolution Grids. In *Proceedings of International Conference on Robotics and Automation*, June 2014

## [MIG 2013] M. Kapadia, K. Ninomiya, A. Shoulson, F. M. Garcia, N. I. Badler. Constraint Aware Navigation in Dynamic Environments. In *Proceedings of the Sixth International Conference on Motion in Games*, 2013

## [IROS 2013] M. Kapadia, F. M. Garcia, N. I. Badler. Dynamic Search on the GPU. In *Proceedings of the International Conference on Intelligent Robots and Systems*, 2013

## [SCA 2013] M. Kapadia, A. Porres, F. M. Garcia, V. Reddy, N. Pelechano, N. I. Badler. Multi-Domain Real-Time Planning in Dynamic Environments. In *EUROGRAPHICS Symposium of Computer Animation*, 2013

## [MIG 2011] A. Shoulson, F. M. Garcia, M. Jones, R. Mead, N. I. Badler. Parameterizing Behavior Trees. In *Proceedings of the Fourth International Conference on Motion in Games*, 2011

# Workshops and Non-peer reviewed Publications

**[Arxiv 2020]** **F. M. Garcia**, C. Nota, P. S. Thomas. Learning Reusable Options for Multi-Task Reinforcement Learning.<https://arxiv.org/abs/2001.01577>

## [AAAI 2019] F. M. Garcia, B. C. da Silva, P. S. Thomas. A Compression-Inspired Framework for Macro Discovery. In *Workshop on Reinforcement Learning in Games*, 2019.

## Extended version: <https://arxiv.org/abs/1711.09048>

## [AAAI 2019] F. M. Garcia, P. S. Thomas. A Meta-MDP Approach to Exploration for Lifelong Reinforcement Learning. In *Workshop on Reinforcement Learning in Games*, 2019.

## Extended version: <https://arxiv.org/abs/1902.00843>

## [Arxiv 2016] S. Giguere, F. M. Garcia, S. Mahadevan. A Manifold Approach to Learning Mutually Orthogonal Subspaces. <https://arxiv.org/abs/1703.02992>

# Academic Service

## I served as reviewer for:

* Association for the Advancement of Artificial Intelligence (AAAI): [2020-2023]
* International Conference on Machine Learning (ICML): [2019-2023]
* Advances in Neural Information Processing Systems (NIPS): [2020-2023]
* International Conference on Autonomous Agents and Multi-agent Systems (AAMAS): [2021]
* International Conference on Learning Representations (ICLR): [2021-2023]
* International Conference on Motions in Games (MIG): 2014
* International Conference on Intelligent Robots and Systems (IROS): 2015

# References

## Available upon request.